

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Classical Magnetic Frustration EUGENE TSAO, ERIK HENRIKSEN,
Washington University in St. Louis — We report on studies of classical magnetic frustration, inspired by Mellado *et al.* [1], by studying an ensemble of freely rotating magnets, made of 1” rare-earth bar magnets press-fit into polypropylene spheres floating on air bearings. The magnets can be arranged in any configuration to study frustration in 1, 2, or 3 dimensions. For instance, arranged in a Kagome lattice the magnets show an absence of high-energy *in-in-in* and *out-out-out* states; the presence of multiple ground states is indicative of macroscopic frustration. We also observe classical “magnon” transport in a one-dimensional chain. We will report on progress made in exploring the behavior of these magnets in triangular, Kagome, and honeycomb lattice configurations.

[1] P. Mellado, A. Concha, and L. Mahadevan, *Phys. Rev. Lett.* **109**, 257203 (2016).

Eugene Tsao
Washington University in St. Louis

Date submitted: 10 Nov 2016

Electronic form version 1.4